

*Renumbered
Claims*

Appl. No. 09/462,682
Amdt. dated July 17, 2007
Reply to Office Action of January 17, 2007

PATENT

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A non-toxic *Pseudomonas* exotoxin A-like chimeric immunogen comprising in sequence: (1) a cell recognition domain comprising domain 1a of Pseudomonas exotoxin A (PE) ~~of between 10 and 1500 amino acids that binds to a cell surface receptor of a mammal~~; (2) a translocation domain comprising a translocation domain of PE wherein the translocation domain is at least 95% identical to SEQ ID NO:2 from amino acid position 280 to amino acid position 344 and serves to translocate the instant chimeric immunogen to the cytosol of the cell; ~~having an amino acid sequence at least 95% identical to the sequence of Pseudomonas exotoxin A (PE) (SEQ ID NO:2) from amino acid position 280 to amino acid position 344 thereof and wherein the domain is capable of effecting translocation to the cytosol of a cell~~; (3) an epitope presenting domain of between 5 and 350 amino acids in length and ~~consisting essentially of~~ ^{that comprises} one cysteine-cysteine loop wherein the loop encodes an epitope of a pathogen and wherein the epitope is non-native to PE domain Ib; (4) an endoplasmic reticulum (ER) retention domain wherein the ER domain is capable of effecting translocation to the endoplasmic reticulum of the cell and wherein the ER retention domain lacks ADP ribosylation activity.

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Claim 2 (currently amended): The immunogen of claim 1, wherein ~~the cell recognition domain is domain 1a of PE and the translocation domain is domain II of PE~~.

Claims 3 to 6 (canceled).

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Claim 7 (previously presented): The immunogen of claim 1 wherein the translocation domain comprises the amino acid sequence of SEQ ID NO:2, from the amino acid at position 280 to the amino acid at position 364.

Claims 8 to 11 (canceled).

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Claim 12 (previously presented): The immunogen of claim 1, wherein the ER retention domain is domain III of PE having a deletion which eliminates ADP ribosylation activity.

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Claim 13 (currently amended): The immunogen of claim 1, wherein A non-toxic *Pseudomonas exotoxin A*-like chimeric immunogen comprising in sequence: (1) a cell recognition domain of between 10 and 1500 amino acids that binds to a cell surface receptor of a mammal; (2) a translocation domain comprising a translocation domain of PE wherein the translocation domain is at least 95% identical to SEQ ID NO:2 from amino acid position 280 to amino acid position 344 and serves to translocate the instant chimeric immunogen to the cytosol of the cell; (3) an epitope presenting domain of between 5 and 350 amino acids in length and consisting essentially of one cysteine-cysteine loop wherein the loop encodes an epitope of a pathogen and wherein the epitope is non-native to PE domain Ib; (4) an endoplasmic reticulum (ER) retention domain wherein the ER domain is capable of effecting translocation to the endoplasmic reticulum of the cell and wherein the ER retention sequence comprises the amino acid sequence REDLK (SEQ ID NO:11).

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Claims 14 to 46 (canceled).

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Claim 47 (currently amended): The immunogen of claim 1, wherein the translocation domain comprises a translocation domain of PE wherein the translocation domain is at least 98% identical to SEQ ID NO:2 from amino acid position 280 to amino acid position 344. translocation domain comprises an amino acid sequence at least 98% identical to the PE amino acid sequence (SEQ ID NO:2) from amino acid position 280 to amino acid position 344 thereof.

Claims 48 to 55 (canceled).

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Claim 56 (currently amended): A non-toxic *Pseudomonas* exotoxin A-like chimeric immunogen comprising in sequence: (1) a cell recognition domain of between 10 and 1500 amino acids that binds to a cell surface receptor of a cell from a mammal; (2) a translocation domain comprising a translocation domain of PE wherein the translocation domain is at least 95% identical to SEQ ID NO:2 from amino acid position 280 to amino acid position 344 and serves to translocate the instant chimeric immunogen to the cytosol of the cell; having an amino acid sequence at least 95% identical to the sequence of *Pseudomonas* exotoxin A (PE) (SEQ ID NO:2) from amino acid position 280 to amino acid position 344 thereof and wherein the domain is capable of effecting translocation to the cytosol of the cell; (3) an epitope presenting domain of between 5 and 350 amino acids in length and consisting essentially of one cysteine-cysteine loop wherein the loop encodes an epitope of a pathogen and wherein the epitope is non-native to PE domain Ib and wherein the cysteine-cysteine loop of the pathogen is located within PE domain Ib in place of amino acid residues 372 to 379, inclusive, of SEQ ID NO:2; (4) an endoplasmic reticulum (ER) retention domain wherein the ER domain is capable of effecting translocation to the endoplasmic reticulum of the cell.

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Claim 57 (previously presented): The immunogen of claim 56, wherein the cell recognition domain is domain Ia of PE and the translocation domain is domain II of PE.

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Claim 58 (previously presented): The immunogen of claim 56 wherein the cell recognition domain is domain Ia of PE.

13
Claim 59 (previously presented): The immunogen of claim 1 wherein the ER retention sequence comprises KDEL (SEQ ID NO:13) or REDL (SEQ ID NO:12).

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Claim 60 (currently amended): The immunogen of claim 1, wherein the amino acid sequence of the ER retention domain is at least 95% identical to the amino acid sequence of SEQ ID NO:2 spanning amino acid positions from 400 to 613 thereof, wherein the ER retention domain has a deletion of the amino acid at position 553 of SEQ ID NO:2 and, optionally, a deletion of the lysine at position 613 of SEQ ID NO:2.

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Claim 61 (currently amended): The immunogen of claim 1, wherein the translocation domain comprises the amino acid sequence of SEQ ID NO:2 at position 279 and the amino acid at position 279 is arginine.